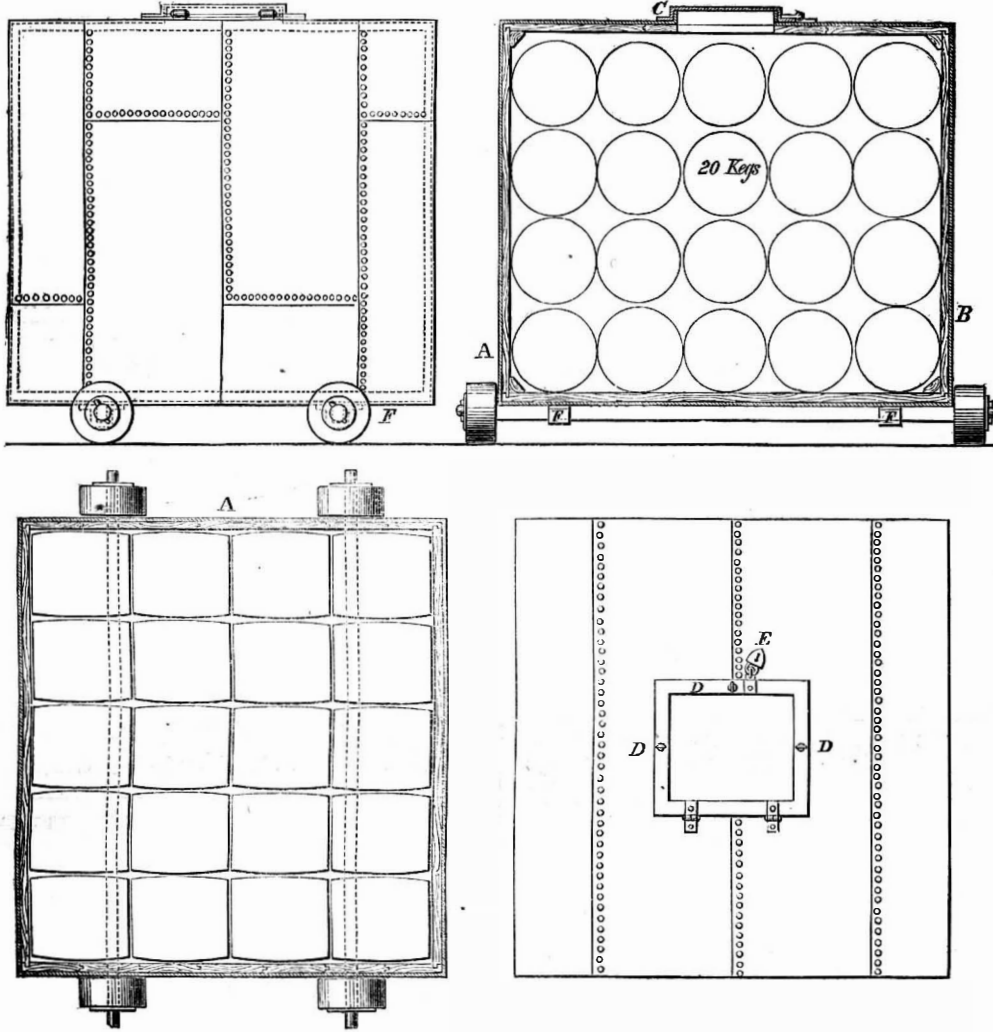


A NEW TUMBRIL CAR.

The Ordnance Department has kindly transmitted us the following plan of a tumbril car, designed for transporting gunpowder and magazine stores upon railways. It is intended to make this class of freight on which all railways demand extra risks absolutely secure against accidents. Appended is a description of the invention:—

A square box is made of 8-inch thick boiler-iron firmly riveted together. This is lined inside with oak planks; the bottom to be 2 inches thick; the sides and top 1½ inches thick. On the two sides, A and B, the planks run upright, so as to stand the lateral pressure of the filled barrels best. In the center of the top there is a charging door, 26 by 24



inches in the clear. The boiler-iron of the car is turned up 2½ inches high. The door is turned down correspondingly, and has besides, flanges all around, which are 2½ inches wide, and are covered below with vulcanized india-rubber strips ¼ of an inch thick, which fit closely on the top of the car, on which the cover is screwed down tight, by means of three screws, D D D, which work on the principle of the powder-tank-covers. Besides this the cover is locked by a padlock, E. The axles of the trucks are 2 by 3 inches, and are riveted to the cars by the two bands, F F. The ends of the axles are turned to a diameter of 2½ inches, and receive the trucks of lignum-vitæ, which have 12 inches diameter and are 4 inches thick. A middle-sized platform car of our railroads would accommodate three such cars, which on their travel will stand crosswise. One tumbril car will hold 80 barrels of powder, or a corresponding quantity of fixed ammunition. All rivets or bolts penetrating to the interior of the oak lining should be of bronze, to the total exclusion of iron. The door is located so as to give superior accommodations for charging and use of the inside space, while its make does not leave open questions about absolute security. (Signed) A. CLUSS.

Office of Ordnance Yard, Sept. 17, 1863.

The sale of the library of the late Henry Thomas Buckle, author of the "History of Civilization in England," realized between seven and eight thousand dollars.

Keeping Verbenas Over Winter.

A correspondent of the *Horticulturist* says:—"My 'better half' has no difficulty in keeping the verbenas in the house through the winter; with her the question has been how to keep verbenas in the open border. After many experiments she has succeeded the past winter, by placing over the plant a frame made for protecting cucumber hills, having in it a 10 by 15 glass. The verbenas remained in fine condition, fresh and green, all winter, was uncovered early in April, then growing vigorously, and on the 10th of May was in full bloom. Those kept in the house are potted in the fall early enough to root well before freezing weather comes on; they are then placed in the east windows of our sitting room, where we have

wood fires, and never allow the frost to enter. The plants are kept clean and moist; tobacco smoke (which I can apply whenever called upon) applied when necessary, and thus the plants are kept healthy and vigorous through the entire winter. This spring they commenced blooming the last of March, were in full bloom by the middle of April, and now are in the garden as bright and beautiful as one can desire. If one will but pay attention to the plants, it is easy to see whether they are suffering from dust, want of moisture, or insects, when the proper remedy can be applied, and the plants kept in a healthy state."

Autumn Planting of Strawberries.

A correspondent of the *Country Gentleman* says:—"All growers of strawberries in the region around New York, make the most extensive autumnal plantings between the 20th of September and the 20th of November. We plant new beds until the ground is closed by frost, and always with success. Professor Huntsman says his most successful plantings are those that are made latest. Such as are planted the latter half of November we cover with a layer of sedge, straw or hay, not for the purpose of keeping it in when the ground becomes frozen; as by thus shutting out the sun's rays we cause the ground to remain permanently frozen during the winter. We find that it is not the permanent cold that injures the plants, but the thawings, which draw out many plants so that their roots become exposed, and are then winter-killed.

GREAT SPECTROSCOPE.—The *Chemical News* (London) contains a brief description of the most powerful spectroscope ever constructed and applied to the spectrum. It has nine prisms filled with the bisulphide of carbon, giving 2½ inches aperture, with telescope of corresponding size. This instrument has established the following points:—that the lines of the solar spectrum are as innumerable as the stars of heaven; it shows distinctly ten times as many lines as are given by Kirchoff in his chart, and an infinitude of nebulous bands just on the point of being resolved; it proves that the coincidences between the bright lines of the metallic spectra and the dark lines of the solar spectrum remain permanent; and it shows that many of the bands of the metallic spectra are broad colored spaces crossed by bright lines.



OF THE
SCIENTIFIC AMERICAN.
THE BEST MECHANICAL PAPER IN THE WORLD.
NINETEENTH YEAR!
VOLUME IX.—NEW SERIES.

The publishers of the SCIENTIFIC AMERICAN beg to announce that on the fourth day of July, 1863, a new volume commenced, and it will continue to be the aim of the publishers to render the contents of each successive number more attractive and useful than any of its predecessors.

The SCIENTIFIC AMERICAN is devoted to the interests of Popular Science, the Mechanic Arts, Manufactures, Inventions, Agriculture, Commerce, and the Industrial pursuits generally, and is valuable and instructive not only in the Workshop and Manufactory, but also in the Household, the Library and the Reading Room.

The SCIENTIFIC AMERICAN has the reputation, at home and abroad, of being the best weekly journal devoted to mechanical and industrial pursuits now published; and the proprietors are determined to keep up the reputation they have earned during the eighteen years they have been connected with its publication.

Chemists, Architects, Millwrights and Farmers!

The SCIENTIFIC AMERICAN will be found a most useful journal to them. All the new discoveries in the science of chemistry are given in its columns, and the interests of the architect and carpenter are not overlooked; all the new inventions and discoveries appertaining to those pursuits being published from week to week. Useful and practical information pertaining to the interests of millwrights and mill-owners will be found published in the SCIENTIFIC AMERICAN, which information they cannot possibly obtain from any other source; subjects in which planters and farmers are interested will be found discussed in the SCIENTIFIC AMERICAN; most of the improvements in agricultural implements being illustrated in its columns.

To the Inventor!

The SCIENTIFIC AMERICAN is indispensable to every inventor, as it not only contains illustrated descriptions of nearly all the best inventions as they come, but each number contains an Official List of the Claims of all the Patents issued from the United States Patent Office during the week previous; thus giving a correct history of the progress of inventions in this country. We are also receiving, every week, the best scientific journals of Great Britain, France and Germany; thus placing in our possession all that is transpiring in mechanical science and art in those old countries. From those journals we shall continue to transfer to our columns copious extracts of what ever we may deem of interest to our readers.

To the Mechanic and Manufacturer!

No person engaged in any of the mechanical pursuits should think of doing without the SCIENTIFIC AMERICAN. It costs but six cents per week; every number contains from six to ten engravings of new machines and inventions which cannot be found in any other publication. It is an established rule of the publishers to insert none but original engravings, and those of the first class in the art, drawn and engraved by experienced artists, under their own supervision, expressly for this paper.

TERMS.

To mail subscribers:—Three Dollars a Year, or One Dollar for four months. One Dollar and Fifty Cents pay for one complete volume of 416 pages; two volumes comprise one year. A new volume commenced on the fourth day of July, 1863.

CLUB RATES.

Five Copies, for Six Months.....	\$6
Ten Copies for Six Months.....	10
Ten Copies, for Twelve Months.....	20
Fifteen Copies, for Twelve Months.....	34
Twenty Copies, for Twelve Months.....	40

For all clubs of Twenty and over the yearly subscription is only \$2 00. Names can be sent in at different times and from different Post-offices. Specimen copies will be sent gratis to any part of the country.

Western and Canadian money or Post-office stamps taken at par for subscriptions. Canadian subscribers will please to remit 25 cents extra on each year's subscription to pre-pay postage.

MUNN & CO., Publishers

No. 37 Park-row, New York.

FROM THE STEAMPRESS OF JOHN A. GRAY & GREEN,